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# A REVIEW OF THE GENEVA NEGOTIATIONS 1987-1988

*by David Cox*

## INTRODUCTION

During the period under review in this paper — from mid-1987 to September 1988 — the United States and the Soviet Union pursued sustained negotiations on nuclear arms control. These negotiations began in Geneva in March 1985 as the Nuclear and Space Talks (NST). The two sides agreed to divide the talks into three negotiations: intermediate-range nuclear forces (INF); the strategic arms reduction talks (START); and the defence and space talks, which the Soviets refer to as the 'space weapons' talks.

In December 1987 the two sides signed a treaty to abolish medium-range missiles, and by May they had come temptingly close to an agreement on START. They were considerably further from an agreement to control the deployment of space weapons and reach a common understanding of the restraints imposed by the ABM Treaty, although the disagreement did not appear to be as great an obstacle as was once thought.

In sum, as the two sides resume negotiations in 1989, the central question will be whether the negotiators can sustain the momentum generated by the successful negotiation of the INF Treaty, and the agreed framework for a START Treaty. This paper identifies the points of agreement and disagreement in the three negotiating areas, beginning with the events leading to the successful conclusion of the INF Treaty, and raises some of the concerns expressed by arms controllers about the issues omitted from the negotiation.*

* Readers may wish to consult CIIPS Background Paper No. 13 for a review of the 1986-87 negotiations. It should be noted that the review does not attempt to cover the multilateral Conference on Disarmament, nor the debate about conventional arms negotiations which has been stimulated by the signing of the INF Treaty.

## THE INF NEGOTIATIONS

By the spring of 1987 there appeared to be a realistic prospect of an INF agreement based on the formula which had emerged from the Reykjavik summit in October 1986. In this formulation, the Soviet SS-20s, the focus of NATO concern since their deployment ten years earlier, would be eliminated in exchange for the elimination of the US ground-launched cruise missiles (GLCMs) and Pershing IIs then being deployed in Europe. However, both sides would be allowed to keep 100 warheads and their associated launchers: in the Soviet case, this residual force was to be kept in Soviet Asia, and therefore out of range of the European NATO countries, while the US warheads were to be kept in the continental United States.

This formula was criticized in particular by the leading NATO European countries, who argued that the agreement would leave the Soviets with a decisive advantage in the European theatre in shorter-range nuclear missiles, with ranges between 500 and 1,000 kilometres. To a lesser extent, US critics noted that the warheads based in the United States would have little military value, while the Soviet warheads in Soviet Asia could hold at risk US military forces in the Pacific.

In Prague on 10 April, Gorbachev went some considerable way to resolving the first of these issues by proposing immediate talks on issues arising from the deployment of shorter-range INF. He also accepted the US definition of these weapons as those having a range of between 500 and 1,000 kilometres, thus effectively defining three categories of nuclear forces: the long-range INF (the SS-20, the SS-4, the GLCMs and the Pershing IIs) with ranges between 1,000 and 5,500 kilometres, the shorter-range INF (the SS-12, SS-22 and SS-23) with

ranges between 500 and 1,000 kilometres, and theatre, or short-range nuclear forces, with ranges of less than 500 kilometres. Several days afterwards, Gorbachev went further by suggesting that all three categories of weapons should be abolished in Europe.

However, the prospect of total elimination exacerbated difficulties within the alliance by lending support to the views of those Europeans who maintained that such agreements 'decoupled' Europe from the US nuclear guarantee, and left the Soviets with an advantage in conventional forces. After a further round of discussions within the alliance, it became clear that the NATO alliance would not accept the inclusion of short-range missiles in a superpower agreement. In any event, the Reagan administration argued, it was impossible to verify such an agreement.

In response to the Gorbachev proposal, on 15 June Reagan announced US support for a total ban on SRINF provided that it was an integral part of an INF Treaty. Echoing a suggestion made previously by US negotiators in Geneva, he urged the Soviets to consider also a total ban on LRINF. As Kenneth Adelman, then Director of the Arms Control and Disarmament Agency, commented, "it would be far simpler, by orders of magnitude, to verify a ban on [these] systems than it would be to verify compliance with numerical limits." On 22 July the Soviets agreed to what became known as the 'double zero' proposal, thus paving the way for a global ban on all missiles with ranges of between 500 and 5,500 kilometres.

*The INF Treaty*

With the scope of an agreement defined in the early summer, and in the expectation that an INF Treaty would not be tied to the resolution of other negotiations at Geneva, there remained one outstanding policy disagreement prior to the technical drafting of the treaty language. That disagreement concerned the 72 Pershing IAs which were deployed in Germany. With a range of 740 kilometres, these constituted SRINF. The Soviets insisted that they be included in the treaty, but since the missiles (but not the warheads) were owned and controlled by West Germany, the United States claimed that they could not be included. The outcome was a compromise which left intact NATO's insistence that third-party systems could not be negotiated in a bilateral treaty: on 26 August Chancellor Helmut Kohl announced that West Germany would be prepared to dismantle the Pershing IAs subject to the satisfactory completion, ratification, and implementation of an INF treaty which provided for the global elimination of intermediate-range nuclear forces.

With this final issue resolved, negotiators pressed ahead with the treaty draft in order to prepare a final, if somewhat rushed, text for signature at the summit meeting on 8 December 1987. The lengthy and complex text, together with two Protocols and a Memorandum of Understanding, essentially established agreement on the following: the missile systems to be eliminated; notification of the numbers, types and locations of the missiles to be eliminated; and inspection provisions to verify both that missiles are eliminated as agreed, and, in the longer term, to verify that new missiles are not built and deployed.

*Missiles Banned by the Treaty*

In order to reach agreement on the procedures necessary for verification of the complete destruction of all banned weapons, the INF negotiators agreed to a comprehensive exchange of information giving the numbers of missiles and launchers deployed, support structures such as transporter vehicles, the number of non-deployed missiles and launchers, and spare rocket stages. This information — contained in the Memorandum of Understanding Regarding the Establishment of the Database — meant that, for the first time, the Soviet Union provided an official, detailed list of every missile including its exact location.

In regard to LRINF, the figures contained no surprises, but there were two interesting anomalies in the SRINF data. First, the Soviet figures for deployed SS-12/22s and SS-23s were almost twice as high as previously published US estimates, suggesting that national intelligence might be less reliable than had previously been thought. Curiously, in the ratification debate in the United States little was made of this point, despite the opportunities that it provided for critics of the treaty. Second, the treatment of the Pershing IA reflected the negotiating compromise: the United States declared 169 non-deployed Pershing IAs in storage at Pueblo, Colorado, but none actually deployed. The Pershing IA was therefore recognized as an accountable missile, but it was left to the West Germans to declare their own position on the missiles owned and deployed on West German soil.

It should also be noted that the database exchange covered only missiles and not warheads. Having already agreed that both sides were entitled to remove and retain or otherwise modify the warheads, the negotiators were able to avoid the added complexity of identifying the numbers of warheads and verifying their destruction. The INF database exchange, therefore, was both a landmark in itself —it provided an official, detailed statement of weapons deployed and warehoused — and also an indication of the greater complexity that lay ahead. In a strategic weapons treaty that involves the actual destruction of warheads and in chemical weapons and conventional force negotiations, agreement about the data exchange, and the extent to which the rival powers are willing to release sensitive information about force developments, will be central to the successful conclusion of negotiations.

*Verifying the Treaty*

It is likely that the principal means of verifying the treaty, as with the previous SALT agreements, will be through national technical means. Article 12 of the treaty,

again reminiscent of the SALT agreements, requires that the parties not interfere with legitimate national technical means. However, attention has inevitably centred on the innovating provisions of the treaty which provide for on-site verification. In order to ensure that the destruction of INF missiles is carried out in accordance with the detailed provisions of the treaty, the parties agreed for the first time to on-site inspection. These inspections gave both sides the right to visit operating locations to confirm the data provided in the Memorandum of Understanding, to confirm the elimination of missiles and launchers in accordance with the agreed schedule, and to initiate a number of short-notice, challenge inspections of operating locations for a further period of thirteen years to confirm that INF missiles had not been reintroduced.

Finally, the treaty provided for a strictly limited form of perimeter factory monitoring. The United States is entitled to monitor the Votkinsk factory which produces stages for both the SS-20 and the SS-25 (a mobile ICBM not covered by the treaty). The Soviet Union is entitled to monitor the Magna, Utah, plant which once made boosters for the Pershing II, and more recently produces components for the MX and Trident missiles.

*Implications of INF Verification*

Until March 1987 Soviet policy on verification, particularly on-site inspection, had been cautious. On the other hand, the Reagan administration took an aggressive approach, calling for 'effective' rather than simply 'adequate' measures of verification. In the words of Caspar Weinberger, this meant that an INF Treaty would require "... the ability to do what bank inspectors do."

The United States backed away from highly intrusive factory monitoring once it became clear that the Soviets were prepared to meet this demand. The response of private industry, of the Congress and NATO allies was skeptical if not hostile to the prospect that Soviet inspectors might have free rein in the inspection of weapons producing factories. As well, the United States probably misjudged the ability of the Soviets to respond positively to the demand for a high degree of intrusiveness.

The INF Treaty, therefore, has changed the verification issue, but it is not yet clear what the consequences will be for the START negotiations or for other, non-nuclear negotiations such as chemical weapons and conventional forces.

## THE START NEGOTIATIONS

By the summer of 1987 the outlines of an agreement to reduce strategic nuclear forces — those with a range in excess of 5,500 kilometres — were already evident. On 8 May 1987 the United States presented a draft START treaty at Geneva which in turn reflected some of the basic areas of agreement reached by the negotiators before the Reykjavik summit. Less than three months later, on 31 July, the Soviets responded with their own draft treaty which, while differing on certain key issues, nevertheless reflected a broad area of consensus. During the fall of 1987 negotiations intensified, and at the December meeting to sign the INF Treaty the two leaders issued a communiqué on the agreements reached in principle in the START negotiations.

### GLOSSARY

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| ALCM | — | Air-launched cruise missile |
| GLCM | — | Ground-launched cruise missile |
| INF | — | Intermediate-range nuclear forces |
| SLBM | — | Submarine-launched ballistic missile |
| SRAM | — | Short-range attack missile |
| SRINF | — | Shorter-range intermediate-range nuclear forces |

The communiqué instructed the negotiators in Geneva to work toward the completion of a START treaty, preferably to be ready for signature at the next summit meeting in the first half of 1988. Noting that the negotiators had been able to develop a joint draft treaty text identifying points of both agreement and disagreement, the communiqué listed the agreed framework, viz:

- ceilings of no more than 1,600 strategic offensive delivery systems
- no more than 6,000 warheads on these 1,600 delivery systems
- a sub-limit of 4,900 on the aggregate number of ICBM and SLBM warheads within the 6,000 total
- a sub-limit of 154 "heavy" missiles to carry not more than 1,540 warheads
- a limit on the total throw-weight of these delivery vehicles such that, after the prescribed reductions, the aggregate throw-weight of Soviet ICBMs and SLBMs will be approximately 50 percent less than current Soviet levels, with the new limit not to be exceeded by either side thereafter.

These ceilings marked steady progress by the negotiators in the period preceding the December summit. For example, the two sides had differed significantly on ballistic missile warhead sub-limits. The United States had wanted a limit of 4,800, with a further sub-limit of 3,300 on ICBMs, thus seriously constraining the largest element of Soviet strategic forces. The Soviets had not agreed to any specific sub-limits on ballistic missiles, and consistently resisted a further sub-limit on ICBMs, threatening to counter with a sub-limit on SLBMs which would have been unacceptable to the United States. The sub-limit of 4,900, therefore, was an important concession by the Soviets, as was their agreement that the throw-weight limit should be entrenched in the treaty itself.

On the other hand, the Washington communiqué alluded to, but passed rather lightly over, significant disagreements between the two sides. With respect to ballistic missile limits, there were three important points. First, the United States proposed to ban mobile missiles. However, the Soviets have already deployed two new types of mobile missiles — the single-warhead SS-25, and the ten-warhead SS-24 — which are designed to reduce the vulnerability of their large, fixed, land-based ICBMs. It seemed unlikely that the Soviets would agree at any point to a ban on these weapons.

Second, the communiqué instructed the negotiators to determine concrete counting rules governing the number of long-range, nuclear-armed air-launched cruise missiles (ALCMs) to be attributed to each accountable heavy bomber. The negotiators had previously agreed that heavy bombers armed with gravity nuclear bombs and short-range attack missiles (SRAMs) would count as one delivery vehicle and one warhead, but they had not reached agreement on ALCMs, which count as individual warheads in the 6,000 ceiling. Reportedly, the United States had proposed that six ALCMs be "attributed" to each ALCM-carrying heavy bomber, whereas the Soviets were pressing for a much higher number.

Third, whereas previously the United States had been reluctant to accept limits on long-range, nuclear-armed sea-launched cruise missiles (SLCMs), the communiqué committed the sides to establishing ceilings on SLCMs, but outside the 6,000-warhead ceiling. They appeared to be far apart on what those ceilings might be, or how to verify them.

Finally, the issue which had dogged the START talks from the outset — the future of the ABM Treaty and the prospect of strategic defence deployments — was left ambiguous at the summit, thus allowing the draft treaty to be pursued while leaving for further discussion the key question of the relationship between reductions in strategic offensive forces and strategic defence.

*Verification: Building on the INF Treaty*

In the Washington communiqué extensive reference was also made to the verification requirements of a future START treaty. The verification provisions of the INF Treaty were evident. As with INF, the parties agreed to a data exchange identifying the numbers, location and support facilities of the weapons to be limited by the treaty. The parties agreed in principle to on-site inspections to include a one-time inspection of the bases identified in the data exchange, on-site observation of the elimination of weapons, and short-notice challenge inspections of remaining missile sites permitted by the treaty, and of missile sites previously dismantled in accordance with the treaty. The communiqué also called for cooperative measures more far-reaching than the INF Treaty to facilitate surveillance by national technical means. Finally, and remembering that production facilities for missiles covered by the treaty would remain after the agreement, the parties agreed to continuous monitoring of critical production facilities, suggesting factory monitoring considerably more intrusive than was called for in the INF Treaty.

*Non-Accountable Weapons*

Although spokesmen for both sides referred to the cuts as 50 percent reductions in strategic nuclear delivery vehicles, considerations regarding manned bombers and SLCMs suggest that, in effect, the cuts would be far less deep.

*Gravity Bombs and SRAMs.* Since manned bombers equipped with gravity bombs and SRAMs count as one in the warhead total as well as the delivery vehicle total, both sides left themselves with the opportunity to add greatly to their warhead total. 100 manned bombers each loaded with twenty bombs and SRAMs, for example, would add 1,900 strategic nuclear charges to the strategic inventory over the 6,000 ceiling. The United States has plans to build over 1,600 SRAM IIs, none of which are accountable weapons in the START negotiations.

*ALCM Counting Rules.* The number of ALCMs "attributed" to an ALCM-carrying bomber seemed likely to significantly understate the actual numbers that could be carried. The initial US position in START was to attribute six ALCMs per bomber, sometimes modified to "six-to-eight." However,the B-52 carries twelve, and can be fitted to carry twenty, while the B-1B has a larger payload and is able to operate with 24 ALCMs. The Soviets argued that the Americans had chosen a number which conformed to the standard Soviet payload, thereby allowing themselves considerably greater flexibility. The Soviets countered by arguing that each type of heavy bomber should be identified, together with its cruise missile-carrying payload. Although some progress was made on this issue through the negotiations in the spring of 1988 (the United States appeared willing to accept ten ALCMs for each heavy bomber), the issue was still unresolved at the end of the summer.

The importance of this issue is readily understood when placed within the context of the constraints imposed by the 6,000-warhead ceiling. With a sub-ceiling of 4,900 on ballistic missile warheads, the implied complement would be 1,100 ALCMs. Of these, 100 might be taken up by the residual force of heavy bombers without ALCMs, each of which count as one delivery vehicle and one warhead. With a nominal counting rule of six ALCMs per bomber, the United States could then deploy about 160 declared ALCM carriers counting for 1,000 warheads under START, but easily able to carry 2,000 in practice.

It is not immediately clear whether, in a START agreement, every deployed ALCM would be counted within the 6,000 warhead total, or whether the number would be derived from the number of ALCM bombers combined

with an agreement on the number allotted to each bomber. But statements arising from the negotiations suggest that there would be no obligation to restrict the number of ALCMs actually carried. First, there is little chance of verifying such an agreement, since peacetime checks would be meaningless insofar as nuclear bombers do not normally carry their ALCMs on training flights. Second, in public statements US defence officials made it clear that, in their view, it was reasonable to "discount" ALCMs because, unlike ICBMs, they could not be used in a disarming first strike and thus contributed to stability. Larger numbers, therefore, could be tolerated.

It is not clear that the Soviets accept this view, since the Moscow communiqué noted only that progress had been made in the area of ALCMs. The Soviets had continued to insist through the negotiations prior to the Moscow summit that the number of ALCMs allotted to each bomber be higher. Moreover, they continued to draw attention to the large reserve of US heavy bombers which, if unconstrained, would provide the USAF with greatly augmented nuclear capabilities. It seemed apparent that the progress noted was an agreement in principle to distinguish conventionally armed long-range ALCMs (not yet deployed but high on the list of US procurement priorities) from nuclear-armed ALCMs, and similarly to devise a means of marking those heavy bombers identified as nuclear, rather than conventional, weapons carriers.

*SLCMs.* The December communiqué had agreed in principle to limits on long-range SLCMs, but outside the 6,000-warhead ceiling. In subsequent negotiations the two sides remained far apart on this point. The Soviets pressed for a limit of 400 nuclear SLCMs on two designated types of submarine, later adding one type of surface ship. The United States continued to maintain that there was no effective means of verifying any such quota. The verification problem is compounded, moreover, by the need to distinguish conventional from nuclear SLCMs. The US Navy, for example, plans to deploy between 3,000 and 4,000 SLCMs, of which about 800 would be nuclear armed. Although the Soviet Union offered a number of possibilities for distinguishing conventional from nuclear SLCMs, including a joint experiment to test the practicality of distinguishing a ship with nuclear SLCMs from a neighbouring ship carrying conventional SLCMs without onboard inspection, the US Navy remained unconvinced. In mid-1988 it was still not evident that the two sides had moved closer to a solution to the verification problem.

If a quota of around 800 SLCMS were assumed, however, the combination of SLCMs and non-accountable bomber-delivered weapons would move the actual total of strategic weapons close to 9,000 rather than the 6,000 formula agreed in the negotiations.

### *Mobile Missiles*

The US draft treaty of 8 May 1987 proposed a complete ban on mobile missiles. The US position, relatively unchanged since the fall of 1985, was that mobile missiles could not be verified, and constituted a potentially destabilizing opportunity to circumvent the requirement for strictly observed ceilings on ICBMs. As indicated above, the Soviets view mobile ICBMs as a guard against the potential vulnerability of the SS-18s and other silo-based missiles. Predictably, in their draft treaty of 31 July 1987, the Soviets proposed that mobile missiles be permitted.

Disagreement on this issue has continued throughout the current negotiations. On the US side, the negotiators have relented somewhat on an outright ban by agreeing to consider the inclusion of strict numerical limits on mobile missiles if they can be persuaded that effective verification is feasible. After the December summit the Soviets made various proposals for tracking mobile missiles, and at a February meeting between Shultz and Shevardnadze progress appeared possible. The wording of a joint statement indicated that Soviet officials had suggested that, for the most part, mobile missiles would be confined to base areas where they could be easily counted.

The Moscow summit talks chaired by Paul Nitze and Marshal Akhromeyev went some considerable way to further resolving the mobile issue. Following the summit, however, the official US summary of remaining issues noted that there were a number of significant issues outstanding, and stressed that "the devil remains in the detail."

### *Modernization*

In contrast to the INF Treaty, which banned a complete range of weapon types, the respective START proposals, with the exception of the US suggestion that mobile missiles be banned, permit all existing strategic delivery systems and allow both sides to modernize or replace weapons within the ceilings imposed by the agreement. Spokesmen for the United States have cited the difficulties experienced in the SALT negotiations as grounds for deciding not to address the issue of modernization. The Soviets do not appear to have commented on this issue.

For the Soviets, this permits them to continue the development of the SS-X-26 and SS-X-27 ICBMs, the SS-NX-24 SLCM, the *Blackjack* bomber, the AS-X-16 SRAM, and an advanced cruise missile reported to be in the development stage. The United States will be permitted to develop the rail-mobile MX (assuming the US is not confounded by its own proposal for a ban on mobile missiles), the *Midgetman* ICBM, the *Trident* D-5 SLBM, the B-2 stealth bomber, the advanced cruise missile, and the SRAM II. Both sides will be entitled to develop new warheads for these systems.

This list of strategic weapons systems under development or in the early stages of deployment indicates that, with or without START, both sides had intended to restructure their forces in the five to seven years that it will take to implement a START agreement. Nevertheless, the

ceilings on delivery vehicles pose certain problems for modernization, particularly in the case of the United States. Essentially, if a nation deploys multi-warhead missiles the ceiling of 6,000 warheads will be reached much earlier than the ceiling of 1,600 delivery vehicles. To maximize deployments under both ceilings, it is necessary to deploy a considerable number of missiles with one or few warheads. The Soviets will be able to do this as long as they continue to deploy the mobile, single-warhead SS-25. On the other hand, the Pentagon has all but terminated work on the *Midgetman*, having concluded that it is not cost-effective to deploy single-warhead missiles. The disparity between defence plans for cost-effective, war-fighting strategic nuclear forces and those for arms control constraints is a subject of continuing debate within the US administration.

*Moscow Agreements*

Although the main business of the Moscow summit remained unsettled, two lesser agreements are of note. First, the leaders agreed to create a nuclear risk-reduction centre to facilitate exchanges of information, of particular value in times of crisis. Second, as a further confidence-building measure, they agreed to provide advance notice of ballistic missile test launches.

## ABM DEFENCES AND SPACE WEAPONS

Prior to the summer of 1987, most discussion of the arms control aspects of President Reagan's Strategic Defense Initiative (SDI) concerned the future of the ABM Treaty. Specifically, debate centred on the Administration's announcement in 1985 that it considered the "broad" interpretation of the treaty to be legal, thereby paving the way for the testing and development of "exotic" ABM systems and components. This issue tended to centre the debate both between the superpower signatories of the treaty, and, within the United States, between the proponents and critics of "Star Wars."

During 1987, however, the focus gradually shifted. First, in April 1987 a debate took place within the US administration on possible compromises between the apparently irreconcilable approaches of the Soviet Union and the United States. Paul Nitze, drawing on suggestions made by a number of arms control specialists outside the government, suggested in public speeches that it might be possible to reach agreement on testing limits without entering the debate about the ABM Treaty interpretation. This would require a series of technical agreements, for example, to restrict the size of mirrors in space or the power of lasers. Nitze's suggestion was sharply resisted by the Pentagon, and both Weinberger and then Assistant Secretary of Defense Richard Perle publicly repudiated the approach as an indirect attempt to circumscribe the SDI programme.

The administration itself, however, showed diminishing interest in continuing the debate about the "broad" versus the "narrow" interpretation of the treaty, in part perhaps reflecting the impact of two congressional resolutions to deny funds to SDI experiments which did not conform to the narrow interpretation of the treaty. In early September 1987, for example, the legal advisor to the State Department, Abraham Sofaer, produced the final part of his report on the ABM negotiating record, but, in contrast to the earlier study supporting the broad interpretation of the Treaty, the September publication occasioned little comment or debate.

Finally, at the end of October 1987 the Soviets also appeared to signal a shift in their position. With the INF Treaty now imminent, both sides had stressed that they were anxious to move ahead with a START treaty. In Washington on 31 October, Shevardnadze placed less emphasis on the need for strict limits to research, and on SDI as a barrier to progress in START, stressing instead the importance of adherence to the ABM Treaty. This was widely interpreted as meaning that the Soviets would settle for an agreement on permissible research, including some experiments in space, broadly compatible with the narrow interpretation of the treaty. Shevardnadze also suggested that the two sides should commit themselves not to withdraw from the ABM Treaty for a period of ten years.

These shifts in position were confirmed in the communiqué issued after the December summit. The two leaders instructed their delegations "to work out an agreement which would commit the sides to observe the ABM Treaty, as signed in 1972, while conducting their research, development and testing as required, which are permitted by the ABM Treaty, and not to withdraw from the ABM Treaty for a specified period of time."

Although the ambiguous language of this declaration was immediately evident, it suggested that the two leaders did not wish the continuing dispute over ABM defences to stall the pursuit of a START treaty. One objective of the declaration, therefore, appeared to be to frame the problem in less confrontational language. When the Geneva meetings resumed in January 1988, however, it quickly became apparent that profound differences remained. On 15 January 1988 the Soviets tabled a draft protocol to the START treaty which committed both sides to the ABM Treaty for a period of ten years. As agreed at the Washington summit, the protocol also required the parties to begin discussions on strategic stability not later than three years prior to the end of the protocol.

The United States agreed neither to the ten-year commitment to the ABM Treaty, nor to the restriction on research and development implied in the Soviet protocol. On 22 January, the US delegation tabled a four-page draft treaty on "the Cooperative Transition to the Deployment of Future Strategic Ballistic Missile Defenses," which, amongst other things, would have committed the parties to abide by the ABM Treaty for a "specified period of time" (previously US negotiators had suggested commitment to the treaty until 1994). The US proposed to discuss permis-

sible research, testing and development in terms which would have avoided a debate about the broad versus narrow interpretation of the treaty, but which would have allowed the SDI programme to continue as scheduled.

The Soviets were firmly opposed to language which shifted the emphasis from support of the ABM Treaty to the transition to missile defences. In the months following, the negotiators sought to develop a draft agreement based on the language of the Washington communiqué, but the differences remained. Although the Soviets still appeared willing to accept a more flexible interpretation of permitted research (emphasizing more the importance of adherence to the treaty than the SDI programme itself), at critical points Shevardnadze re-emphasized the link to the START treaty: there could be no deep reductions in START without adherence to the ABM Treaty. Consequently, the Moscow summit at the end of May did little more than encourage continued negotiation to develop a joint draft text.

Other developments, however, appeared to make the issue of SDI less critical. First, in May 1988 the Defense Science Board of the Pentagon recommended a radical restructuring of the SDI programme to begin with the deployment of a single ground-based system within the terms of the treaty, and clearly indicating that operational space-based systems were many years away. This report was apparently accepted by senior officials including Shultz and Carlucci, who recommended to the president that a system be built in the first instance to protect the national capital region. Second, funding cutbacks and restrictions made it apparent that early deployment was not practical, thus implying that there was little advantage in negotiating an end to the ABM Treaty when there was little prospect of an early transition to ballistic missile defences.

## NUCLEAR TESTING

During 1986 the Soviet Union had pressed the United States to include a ban on nuclear tests as part of a total arms control summit package. Throughout 1987 and 1988 the United States repeated its position that nuclear testing was necessary for national security reasons, but repeated its suggestion that the two sides discuss means to improve the assessment of compliance with two existing treaties — the Threshold Test Ban and the Peaceful Nuclear Explosions treaties, both of which banned explosions above 150 kilotons. Talks on this issue began in November 1987 centring on the proposal for an exchange of nuclear tests. This would have permitted each side to calibrate its seismic equipment on the basis of a nuclear explosion of known magnitude. While this was not agreed, in the fall of 1988 scientific exchanges began to witness nuclear tests and take accurate seismic recordings. Known as the Joint Verification Experiment (JVE), the exchanges will provide greater certainty about the yield of the nuclear tests.

While the official negotiators sought to agree on the procedures for the verification of a 150-kiloton threshold, however, there appeared to be an increasing scientific consensus that a very low yield test ban was verifiable. In late May 1988 a blue-ribbon scientific panel in Washington produced a report which concluded that explosions over ten kilotons could be easily monitored by external seismic networks and national technical means. It identified the area of difficulty as being below two kilotons, at which level detailed verification agreements involving in-country seismic networks would be required to ensure compliance.

## CONCLUSIONS

As the negotiations continue in Geneva in 1989, it seems evident that further arms control agreements are within reach. In particular, the new US Administration seems likely to accept the basis for agreement in strategic weapons, as described above. At the same time, the substance of the proposals suggests two contrary conclusions. The first is that superpower arms control negotiations provide a continuing forum for superpower diplomacy which is itself of great value. The agreements on a nuclear risk-reduction centre and notice of ballistic missile test flights are illustrations of the stabilizing procedures that result from continuing negotiations.

On the other hand, insofar as the "deep reductions" will legitimize the continuation of massive superpower nuclear arsenals and largely unconstrained modernization, they may be seen as modest arms control measures at best, which may increase political and public confidence, but which will scarcely dent the massive superpower nuclear arsenals. Since START will require many years to implement, it seems likely that the next agreement will remain in place for a generation. In these circumstances the pause during the US presidential transition may provide an opportunity to ask whether this is the appropriate agreement on which to base nuclear stability in the 1990s and beyond.

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The views expressed in this paper are the sole responsibility of the author, and should not be taken to represent the views of the Institute and its Board.

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